L 39622-66
ACC NR: AT6003086

whose structure is determined by the rate of the chemical transformations. Orig. art. has: 23 formulas.

SUB CODE: 20,07/ SUBM DATE: 00/ ORIG REF: 004/ SOV REF: 000/ OTH REF:000

Card 3/3

KITOV, V.

Problems in granting credit to rural trade organizations. Den.i kred. 15 no.2:15-23 F '57. (MLRA 10:5)
(Retail trade--Finance)

KITOV, V.

Characteristics of the working capital and crediting of a consumers' cooperative. Den. i kred. 16 no.5:26-32 My '58.
(Cooperative societies--Finance) (MIRA 11:6)

KITOV, V.

The use of school premises. Politekh.obuch. no.5:89-90 My '59.
(MIRA 12:7)

1. Kuybyshevskiy institut usovershenstvovaniya uchiteley.
(Kuybyshev--School management and organization)

KITOV, V.

Currency circulation in the village and problems of issuing credit. Den. i kred. 18 no.12:10-17 D'60. (MIRA 13:11)
(Collective farms--Finance) (Agricultural credit)

KITOV, V.

Money circulation and trade in the village. Den. i kred. 21 no.11:15-19 N '63. (MIRA 17:2)

KITOV, Yu.P., aspirant

"Minimum weight of complete frames." Nauch. trudy KHIIT no.58: 47-64 '62. (MIRA 16:12)

KITOV,YU.I. (Khar'kov)

"The minimum-weight design of complex frames".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

Kitova, A.I.

AUTHOR TOROPOV A.P., KITOVA A.I.. PA - 2691
TITLE An Attempt at Measuring of the Viscosity of an Extended Liquid.
(Opyt izmereniya vyazkosti pastyanutoy zhidkosti - Russian)
PERIODICAL Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol 32, Nr 2, pp 372-372 (USSR)
Received 5/1957 Reviewed 6/1957

ABSTRACT The authors endeavered to determine whether measurements of this kind are possible. In the following some results of these attempts are shown: Benzene served as a trial object. The physical constants of the preparation used agreed fully with data found in books of reference. In addition , benzene was distilled. Measurements were carried out by means of STOKES' method in cylindrical ampules of molybdenum glass ES-5K with an inner diamter of 6 mm. Into the ampule filled with benzene a glass sphere was inserted and the ampule was soldered in such a manner that one glass bubble remained in it. In this manner three ampules with glass bubbles of different sizes were prepared. At first the ampule was placed horizontally and the temperature of the thermostat was slowly increased until the whole volume of the ampule was filled with a liquid. Then the temperature (the "solving temperature") was recorded and slow cooling of the thermostat until the liquid broke was immediately begun. This process was repeated several times until the solution temperature and breaking-off temperature were constant up to ± 0,2° C. After the end of this preliminary treatment of the ampule the glass sphere was placed into one of the ends of the ampule and the thermostat was heated up to solution temperature. After the vanishing of the glass bubble in the ampule the

Card 1/2

An Attempt at Measuring of the Viscosity of an Extended Liquid.

temperature of the thermostat was adjusted so as to be somewhat lower than solution temperature. The ampule was kept at this temperature for about 2o to 25 minutes and was then quickly placed vertically in such a way that the end containing the sphere pointed upwards. New duration of the falling of the sphere from the upper to the lower end was measured: in the case of all ampules and at all temperatures chosen this was done at least 15 times. Next, computation of viscosity on the basis of these data is discussed in short.
According to the author's opinion the results shown in a table are convincing proof of the fact that the viscosity of a liquid can be measured by means of STOKES' method.

ASSOCATION State University of Central Asia
PRESENTED BY
SUBMITTED 1o.9.1956
AVAILABLE Library of Congress
Card 2/2

TOROPOV, A.P.; KITOVA, A.I.

Measuring the viscosity of stretched liquids. Uzb.khim. zhur. no.4:34-38 '59. (MIRA 13:1)

1. Sredneaziatskiy gosudarstvennyy universitet im. V.I. Lenina.
(Viscosity)

KITOVA, A.I.; VARSHAVSKIY, Ya.M.

Electron absorption spectra of solutions of aromatic hydrocarbons in liquid HCl in the presence of $AlCl_3$. Dokl. AN SSSR 135 no.6:1395-1398 D '60. (MIRA 13:12)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova. Predstavleno akademikom V.A. Karginym.

(Hydrocarbons--Spectra)

1827
S/020/62/142/005/019/022
B110/B101

5.2430

AUTHORS: Kitova, A. I., and Varshavskiy, Ya. M.

TITLE: Exchange of deuterium between aromatics and liquid deuterium chloride

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 5, 1962, 1112-1115

TEXT: The principal investigation results of the isotopic exchange of hydrogen with liquid deuterium chloride are given. HCl enriched with 1.5-2% deuterium was obtained from a mixture of concentrated H_2SO_4 and HCl with the calculated amount of D_2O. The high vapor pressure (~40 atm) of DCl at room temperature required Teflon-lined Monel metal containers. The required DCl amount was siphoned to the hydrocarbon in the Monel test tube, and heated in the thermostat for a certain time. DCl was evaporated, the hydrocarbon purified, burned in the O_2 flow, and the deuterium concentration was determined by the dropping method in the resulting water. n

Card 1/4

Exchange of deuterium between...

(rate of isotopic exchange) and k (velocity constant) were calculated according to the second author (ZhFKh, 30, 1376 (1956)), the coefficient α for the deuterium distribution between hydrocarbon and HCl was assumed to be 2.2. In benzene, about 2 H atoms are exchanged at ~20°C within one year ($K^{\sim 20}_{C_6H_6} = 4 \cdot 10^{-8} sec^{-1}$). The isotopic equilibrium is established faster with increasing number of aromatic rings: at 25°C, in naphthalene, <71 hrs (n = 7.6); phenanthrene, <23 hrs (n = 10); pyrene, <6 hrs (n = 9.6). The decrease of k with increasing test duration proves the non-equivalence of the individual H atoms in the molecule as to electrophilic substitution. k(naphthalene): $1 \cdot 10^{-4} - 1 \cdot 10^{-5} sec^{-1}$; k(phenanthrene): $0.9 \cdot 10^{-4} - 0.6 \cdot 10^{-4} sec^{-1}$; k(pyrene): $6 \cdot 10^{-4} - 1 \cdot 10^{-4} sec^{-1}$. Results obtained for diphenyl: at 25°C: 2 hrs, n = 0.5; 10 hrs, n = 0.7; 21 hrs, n = 1.7; 49 hrs, n = 2.9; at 20°C: 79 hrs, n = 3.0; 279 hrs, n = 5.2; 1200 hrs, n = 6.0; 4800 hrs, n = 6.0. Owing to the chemical

Card 2/4

Exchange of deuterium between...

properties of diphenyl, the four H atoms in m-position are not inclined to electrophilic substitution. Results obtained for toluene, ethyl benzene, and isopropyl benzene: at 25°C: 6 hrs, n = 0.4, 0.4, 0.5; 10 hrs, n = 0.7, 0.7, 0.7; 24 hrs, n = 1.7, 1.5, 1.4; at 20°C: 1200 hrs, n = 4.4, 4.0, 4.1. The similarity of values proves the low effect of the alkyl group substituents on the substitutionability of H atoms in the benzene ring. In monoalkyl benzenes, the metahydrogen atoms are well suited for electrophilic substitution since the inductive effect and the effect σ of the π-conjugation of the alkyl group have the same sign. In mesitylene, durene, pentamethyl benzene, the isotopic equilibrium is established at 25°C within 1 hr. Since the H atoms of CH_3 groups do not react with DCl, no isotopic exchange took place in hexamethyl benzene. In di- and triphenyl methane, only the o- and p-hydrogen atoms were exchanged. The ability for electrophilic substitution decreases with increasing number of phenyl groups per aliphatic C-H bond. In naphthalene, the hydrogenation of one ring increases the substitutionability of H atoms

Card 3/4

Exchange of deuterium between...

of the other ring. Addition of $AlCl_3$ accelerates the isotopic exchange C_6H_6 - DCL, cyclopentane - DCl, and cyclohexane - DCl, but not that of $CH_3C_6H_5$ - DCl. The electrophilic reactivity increases as follows: HI < HCl < HBr ≪ HF, which does not agree with the increase in acidity HF ≪ HCl < HBr < HI. There are 1 table and 17 references: 15 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: H. C. Brown et al., J. Am. Chem. Soc., 75, 6292 (1953). R. P. Bell, Acids and Bases, London, 1952, p. 57.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

PRESENTED: September 30, 1961, by A. N. Frumkin, Academician

SUBMITTED: September 22, 1961

Card 4/4

KITOVA, A.I.; VARSHAVSKIY, Ya.M.

Deuterium exchange between aromatic hydrocarbons and liquid deuterium chloride. Dokl. AN SSSR 142 no.5:1112-1115 F '62. (MIRA 15:2)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Predstavleno akademikom A.N.Frumkinym.

(Hydrocarbons)
(Deuterium compounds)

VARSHAVSKIY, Ya.M.; KITOVA, A.I.

Optical cell for measuring absorption spectra of chemically active solutions under pressure. Opt. i spektr. 13 no.4:569-571 O '62. (MIRA 16:3)
(Absorption spectra) (Solution (Chemistry))
(Optical instruments)

KITOVA, M.

COUNTRY : BULGARIA
CATEGORY : Chemical Technology. Chemical Products and Their Uses. Part 3. Synthetic and Fats and

ABS. JOUR. : RZKhim., No. 1 1960, No. 2161

AUTHOR : G"l"bov, A.; Kitova, M.
INST. : Higher Medical Institute, Plovdiv
TITLE : New Colorimetric Method of Quantitative Determination of Papaverine

ORIG. PUB. : Sb. tr. Visch. med. in-t Plovdiv, 1956-1957 (1958), 11, 145-150

ABSTRACT : A new method of quantitative determination of papaverine (I), consisting in the quantitative precipitation of I by a definite volume of bromocresol purple (II) with a definite extinction and concentration, and measurement of the last values of II which did not enter into

Medicinal Substances. Galenicals and Medicinal Forms

CARD: 1/2

H-67

COUNTRY :
CATEGORY :

H

ABS. JOUR. : RZKhim., No. 1 1960, No. 2161

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT cont'd : reaction with I, was developed. Taking into account a standard curve plotted beforehand, the quantity of I is calculated (I and II react in equimolecular quantities). The time of determination is 10 min and in serial determinations, still less. The method is accurate to 0.2%, with the ratio of I:II from 2:9 to 2:4.-- From authors' summary

CARD: 2/2

KITOVANI, Sh.K.

KITOVANI, Sh.K.

Prospects for finding gas and oil in the Democratic Republic of Vietnam. Trudy VNIGNI no.42:204-232 '64.
(MIRA 18:3)

KITOVANI, Sh. S., Cand Tech Sci -- (diss) "On the problem of the rational construction of track in tunnels of various types." Tbilisi, 1957. 20 pp with drawings (Tbilisi Inst of Engineers of Railroad Transport im V. I. Lenin), 100 copies (KL, 2-58, 113)

KITOVANI, Sh.S., kand.tekhn.nauk

Laying tracks on precast concrete foundations in railroad tunnels. Transp.stroi. 9 no.8:32-35 Ag '59. (MIRA 13:1)
(Concrete blocks) (Railroads—Track)

KITOVANI, Sh.S.

The problem of the suitability of asphalt concrete for the subgrade of track in tunnels. Trudy GPI [Grus.] no.5:53-58 '61. (MIRA 15:12)

(Asphalt concrete)
(Tunnels)

ZASS, M.L., inzh.; KITOVER, A.B., tekh.

Special equipment for remote gas-shielded electric welding. Sudostroenie 30 no.10:47-50 O '64. (MIRA 17:12)

KITOVER, A.B., inzh.; KNIGEL', V.A., inzh.; PLYUSHCHOV, V.I., inzh.

Universal gun for argon arc welding. Svar. proizv. no.1:40 Ja '65. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya.

Mathematical Reviews
Vol. 14 No. 10
Nov. 1953
Mechanics

Hoover, K. A. On the use of special systems of biharmonic [illegible] of some problems of the theory [illegible]

[illegible] constant [illegible] stress [illegible] state [illegible] system [illegible] conditions are [illegible] of a plate the

$$\varphi = (A\cos kx + Bkx\sin kx + C\sin kx + Dkx\cos kx)e^{ky}$$

is assumed. The boundary conditions lead to a transcendental equation for k and to three linear equations between A, B, C and D. The numbers of functions are calculated for several combinations of the boundaries $x = \pm a$. The same is done for a wedge-shaped and a ring-shaped plate, and for a state of plane stress in a circular cylinder with boundary-conditions on the lateral surface. The transcendental equation [illegible] $\sin z + z\cos z = 0$, [illegible] and z is a multiple [illegible] wave a given problem [illegible] a family of functions $\{\varphi_i\}$ is chosen [illegible] members of which satisfy the boundary-conditions [illegible] the boundary. Then an approximate [illegible] is found by taking a finite series $\varphi = \sum_{i=1}^{n} c_i\varphi_i$ and determining the coefficients c_i in such a manner that the boundary conditions on the rest of the boundary are satisfied as well as possible.

W. H. Muller (Amsterdam)

KITOVER, K.A., kandidat tekhnicheskikh nauk; MIKAILOV, V.F., inzhener, redaktor; PULKINA, Ye.A., tekhnicheskiy redaktor

[Thin circular plates; static calculations under axisymmetrical load and concentrated forces] Kruglye tonkie plity; staticheskie raschety pri osesimmetrichnoi nagruzke i sosredotochennykh silakh. Leningrad, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 113 p. [Microfilm] (MLRA 7:10)

(Strains and stresses)
(Engineering--Tables, calculations, etc.)

KITOVER, K.A., kand.tekhn.nauk, dots.

New solution to the problem of torsion in a rod with a cross section in the form of a spherical rectangle. Trudy LPIKHP 6:67-73 '54. (MIRA 11:5)

(Elastic rods and wires) (Torsion)

SOV/124-57-5-5909

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 128 (USSR)

AUTHOR: Kitover, K. A.

TITLE: On the Calculation of a Rectangular Plate Resting on an Elastic Foundation (K raschetu pryamougol'nykh plit na uprugom osnovanii)

PERIODICAL: Sb. tr. obshchetekhn. kafedr Leningr. tekhnol. in-ta kholodil'n. prom-sti, 1955, Vol 8, pp 66-70

ABSTRACT: The author employs the Zimmermann-Winkler hypothesis to calculate the bending stresses in a rectangular plate resting on an elastic foundation. A solution for the plate deflection w is sought in the form

$$w = w_o + \Sigma c_j w_j \qquad (j = 1, 2, \ldots)$$

wherein w_o is a particular solution satisfying the equation

$$\nabla^2 w + \beta^4 w = q/N \qquad (1)$$

and w_j is a plurality of functions each of which is an integral of equation (1) and each of which fulfills the boundary conditions along the same edges of the plate as does w_o. The system of functions w_j is

Card 1/2

SOV/124-57-5-5909

On the Calculation of a Rectangular Plate Resting on an Elastic Foundation

broken down into groups: the symmetrical functions w_j^+ and the skew-symmetrical functions w_j^-. The author adduces relationships which, for the type of boundary conditions usually encountered, yield values for the desired functions w_j except for a constant multiplier. A method is described for determining the parameter that enters into the solution.

A. G. Ishkova

Card 2/2

SOV/124-57-8-9330

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 8, p 111 (USSR)

AUTHOR: Kitover, K. A.

TITLE: Contribution to the Problem of the Flexure of Sector-shaped Plates (K zadache ob izgibe sektornykh plit)

PERIODICAL: Sb. tr. obshchetekhn. kafedr. Leningr. tekhnol. in-t kholodil'n. prom-sti, 1956, Vol 12, pp 91-108

ABSTRACT: The paper submits formulas for the summation of certain series encountered in the solution of a problem on the bending of plates. This provides a possibility of obtaining solutions in the form of rapidly converging series for sector-shaped plates with clamped and freely supported radial edges under the action of various loads and in particular those of concentrated forces.

I. Ye. Sakharov

Card 1/1

SOV/124-57-5-5892

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 125 (USSR)

AUTHOR: Kitover, K. A.

TITLE: On Applying the Solutions of a Biharmonic Equation Written in Terms of Power Polynomials to Problems Relating to the Statics of Rectangular Plates (O primenenii reshenly bigarmonicheskogo uravneniya v stepennykh polinomakh k zadacham statiki pryamougol'nykh plastin)

PERIODICAL: Tr. Leningr. tekhnol. in-t kholodil'n. prom-sti, 1956, Vol 14, pp 299-314

ABSTRACT: The author examines series having the form

$$\Sigma n^{-\mu}\cos nx, \quad \Sigma n^{-\mu}\sin nx \quad (n = 1, 2, \ldots; \ 0 < x < 2\pi)$$

Tables are included to facilitate calculation of the summation of the series for several values of μ. Based on the functions proposed by the author, polynomials are set up which satisfy the biharmonic equation, whereupon the author proceeds to examine, with a certain degree of approximation, some problems relating to the statics of rectangular plates, e.g., end-clamped deep beams, edge-clamped plates, effective flange widths of thin-walled I-beams, etc.

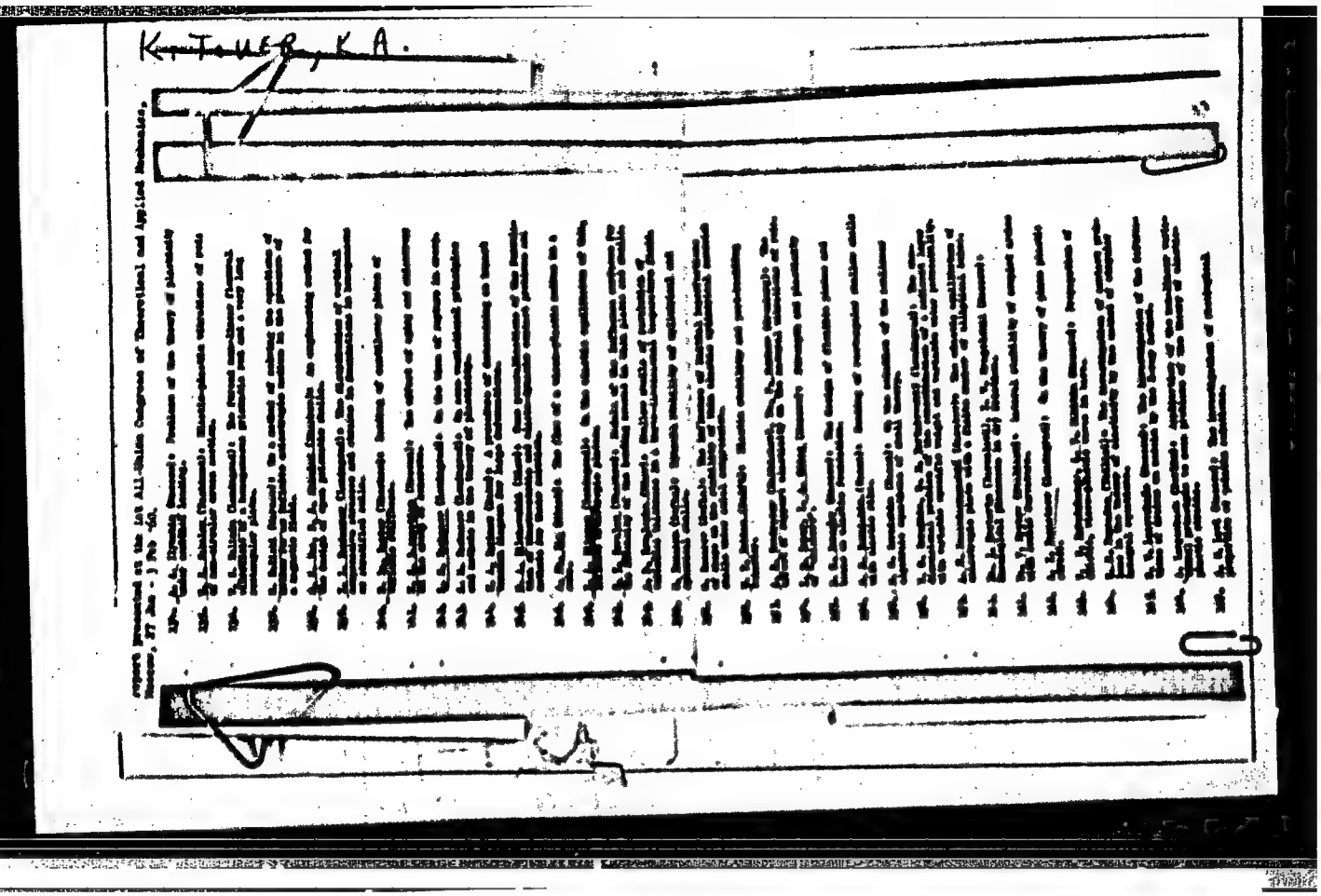
P. M. Varvak

Card 1/1

KITOVER, K.A. (Leningrad)

Using rational polynoms for problems in the plane stress of orthotropic plates. Stroi.mekh.i rasch.soor. 1 no.5:20-24 '59. (MIRA 13:1)

(Elastic plates and shells)



KITOVER, K.A. (Leningrad)

Elastic equilibrium of infinite thin plates made of an orthotropic material. Inzh.sbor. 30:85-96 '60. (MIRA 13:10)
(Elastic plates and shells)

GASTEV, V.A.; KITOVER, K.A. (Leningrad)

Determination of the elastic characteristics of ribbed plates.
Stroi. mekh. i raseh. soor. 3 no.6:1-4 '61. (MIRA 15:4)
(Elastic plates and shells)

KITOVER, K.A. (Leningrad)

Problem of elastic equilibrium of an infinite wedge. Inzh.zhur. 2 no.3:88-98 '62. (MIRA 15:8)

(Wedges)

43084
S/258/62/002/003/003/008
I006/I206

10.6100

AUTHOR: Kitover, K.A. (Leningrad)

TITLE: On elastic stability of infinite wedge

PERIODICAL: Inzhenernyy zhurnal. v.2, no.3, 1962, 88-98

TEXT: A solution to the problem of an infinite wedge under any form of load is worked out using the strain function concept. The strain function ψ is represented by the sum $\psi = \psi_0 + \psi_*$, where ψ_0 obeys only to given load, and possibly to boundary condition on one face of the edge, while ψ_* corrects the deformations in boundary conditions produced by ψ_0 on one or both wedge faces. Effectiveness of this method is based on the fact that ψ_0 is expressed by elementary functions, while ψ_* is determined by Fourier integrals with integrands decreasing strongly with increase of variable of integration. There are 3 figures.

SUBMITTED: August 1, 1960

Card 1/1

KITOVER, K.A., kand.tekhn.nauk

Design of round pipe screens for heat exchange apparatus. Khim. mashinostr. no. 6:14-18 N-D '62. (MIRA 17:9)

BERKMAN, B.A. (Leningrad); KITOVER, K.A. (Leningrad)

Deformations of a circular ring under the action of equal concentrated twisting pairs. Inzh. zhur. 3 no.1:179-182 '63. (MIRA 16:10)

(Deformations (Mechanics))

ACC NR: AM6015100 Monograph UR/

Kitovich, Vsevolod Vasil'yevich

Operativnyye zapominayushchiye ustroystva na ferritovykh serdechnikakh i tonkikh magnitnykh plenkakh) Moscow, Izd-vo "Energiya," 1965. 238 p. illus., biblio. 8200 copies printed.

TOPIC TAGS: storage device, ferrite core memory

PURPOSE AND COVERAGE: This book is intended for scientific and technical personnel and aspirants working in the fields of automation and computational technique, and for students at schools of higher education. The book deals with ferrite core and magnetic film storage devices and presents the physical basis of memory cell operation. Some problems related to the adjustment and testing of working magnetic storage devices are discussed. A considerable part of the book deals with problems concerning the stability of information storage and the separation of useful signal from noise. The author thanks Ye. V. Tsurikova, L. A. Oksent'yevich, Z. P. Vostrikova and V. G. Strakhov for their assistance, and V. V. Tashchiyan for editing the book.

TABLE OF CONTENTS:

Foreword -- 3

Card 1/5 UDC: 681.142.652

ACC NR: AM6015100

Card 2/5

ACC NR: AM6015100

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ACC NR: AM6015100

Card 4/5

ACC NR: AM6015100

SUB CODE: 09/ SUBM DATE: 10Nov65/ ORIG REF: 031/ OTH REF: 042

Card 5/5

KITOVICH, V.V.

Interference caused by the nonidentity of cores in ferrite matrix storage cells. Priborostroenie no.7:5-7 Jl '56. (MLRA 9:8)
(Information storage and retrieval systems)
(Magnetic memory (Calculating machines))

L 45722-65 EWT(d)/EWP(k)/EWP(z)/EWP(v)/EWP(h)/EWP(l) Pe-5/Pr-4/Ps-4/Pt-7/Pu-4 IJP(c)
UR/0000/64/000/000/0616/0624

AUTHOR: Kitovich, V. V.; Vostrikova, Z. P.; Strakhov, V. C. 31 B+1

TITLE: Experimental model of a thin film z-type memory with constant displacement field 16

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and computer engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 616-624

TOPIC TAGS: thin film memory, z-type memory, constant displacement field

ABSTRACT: The theoretical analysis of the thin film z-type matrices for memories without displacement has been performed by E. H. Bredly (Y. Brit. IRE, v. 20, no. .0, 1960, pp 765-784). The present paper analyzes the operation of such a matrix in the presence of a constant displacement field. This analysis is needed because during the first stage of production the easy magnetization axis may be displaced to the right as well as to the left relative to the edge of the matrix.

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L 45722-65

ACCESSION NR: AT5011634

This axis deviation was determined by a specially constructed device whose construction and operation are described in detail. Experimental results show that memory circuits with displacement permit a larger angular spread of the easy magnetization axis. The experimental permissible limits for the registration and reading current variations seem to be compatible with reliable operation of the memory, though they turned out to be considerably smaller than those predicted by the theoryThe amperewise complications appear during the transition to printed circuits. Orig. art. has: 4 formulas, 7 figures, and 3 tables.

ASSOCIATION: None

SUBMITTED: 29Sep64 ENCL 00 SUB CODE: DP

NO REF SOV: 001 OTHER: 004

Card 2/2

L 41046-65 EED-2/EWT(d)/EWP(1) Pq-4/Pk-4/Pq-4 IJP(c) GG/BB
ACCESSION NR: AP5006284 S/0103/65/026/002/0326/03 2

AUTHOR: Kitovich, V. V. (Moscow)

TITLE: Effect of the shape of a thin-film magnetic element on the writing field size in a memory matrix

SOURCE: Avtomatika i telemekhanika, v. 26, no. 2, 1965, 326-332

TOPIC TAGS: magnetic film storage 16C

ABSTRACT: The effects of the shape of thin-film storage elements on the angle of spread of magnetization directions, the anisotropic effective field, and the writing field are theoretically considered. The estimated spread of directions and anisotropic effective fields for memory elements having various shapes are presented. It is found that: (1) In all cases, the reduction of angles of spread by changing the anisotropy of the shape results in an increased effective field; (2) The range of permissible variations of the writing current cannot be widened

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L 41046-65
ACCESSION NR: AP5006284

by changing the storage-element-shape anisotropy: (3) The storage-element size should be so selected that the relative value of demagnetizing fields be small and close to isotropic; the shape anisotropy has no effect on the range of permissible writing-field variation but tends to widen the reading field; in selecting the storage-element shape, the requirement of their maximum density on the backing surface must also be met. "In conclusion, the author wishes to thank Prof. R. V. Telesnin and V. V. Kobelev, as well as all participants of the Thin-Magnetic-Film Seminar, MGU, for discussing the above work." Orig. art. has: 2 figures, 31 formulas, and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 21Mar63 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 001 OTHER: 002

CC
Card 2/2

ACCESSION NR: AP4017967 S/0236/63/000/004/0143/0151

AUTHOR: Kitra, S. P.; Nyamura, A. A.

TITLE: Automatic optimalization of control process by disturbance

SOURCE: AN LitSSR. Trudy*, Seriya B, no. 4, 1963, 143-151

TOPIC TAGS: analog computer, simulator, automatic control, automatic control disturbance process, control process optimalization, optimality index, controlled object parameter change, controller regulation

ABSTRACT: The problem of automatic optimalization of a control process by disturbance was examined in the case of slowly changing parameters of the controlled object. The optimalization of the control by disturbance process was effected in this particular case by continuous regulation of the controller for the appropriate parameter by the deviation of the optimality index, which is determined by the equation

$$\varphi = \int_0^t x_{pr}(t)\, x_1(t)\, dt,$$

Card 1/2

ACCESSION NR: AP4017967

where $x_{p\tau}(t)$ is the output value of the object, and $x_1(t)$ is the disturbance acting on the object. The proposed system was tested on an electronic analog computer, and findings showed that it has a relatively high-speed response and can be easily constructed. Orig. art. has: 5 figures and 21 equations.

ASSOCIATION: Institut energetiki i elektrotekhniki AN Litovskoy SSR (Institute of Power Engineering and Electrotechnics, AN Lithuanian SSR)

SUBMITTED: 19Feb63 DATE ACQ: 13Mar64 ENCL: 00

SUB CODE: CO, IE NO REF SOV: 004 OTHER: 000

Card 2/2

ACCESSION NR: AP4042241 S/0236/64/000/002/0165/0170

AUTHOR: Kitra, S. P. (Kytra, S.); Nyamura, A.A. (Nemura, A.)

TITLE: Some problems in the optimization of regulation by perturbations

SOURCE: AN LitSSR. Trudy*. Seriya B, no. 2, 1964, 165-170

TOPIC TAGS: control system, automatic control, self-regulating system, feedback control, perturbation, automatic control system, dynamic control system, control theory, automation, optimization

ABSTRACT: The authors investigate the automatic optimization of the regulation, by means of perturbation of a system which is undergoing slow changes in certain of its descriptive parameters. The optimization is accomplished by continuous automatic regulation of a regulator parameter, according to the deviation of the index of optimality, which is assumed to have the form

$$\varphi(t) = \int_0^t x_{y_0}(t) \cdot x_0(t) \cdot dt, \qquad (1)$$

where $x_{y_0}(t)$ is the output magnitude and $x_0(t)$ is the perturbation acting on the object at time t. It is assumed that the perturbations $x_0(t)$ are given by an ergodic stationary

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ACCESSION NR: AP4042241

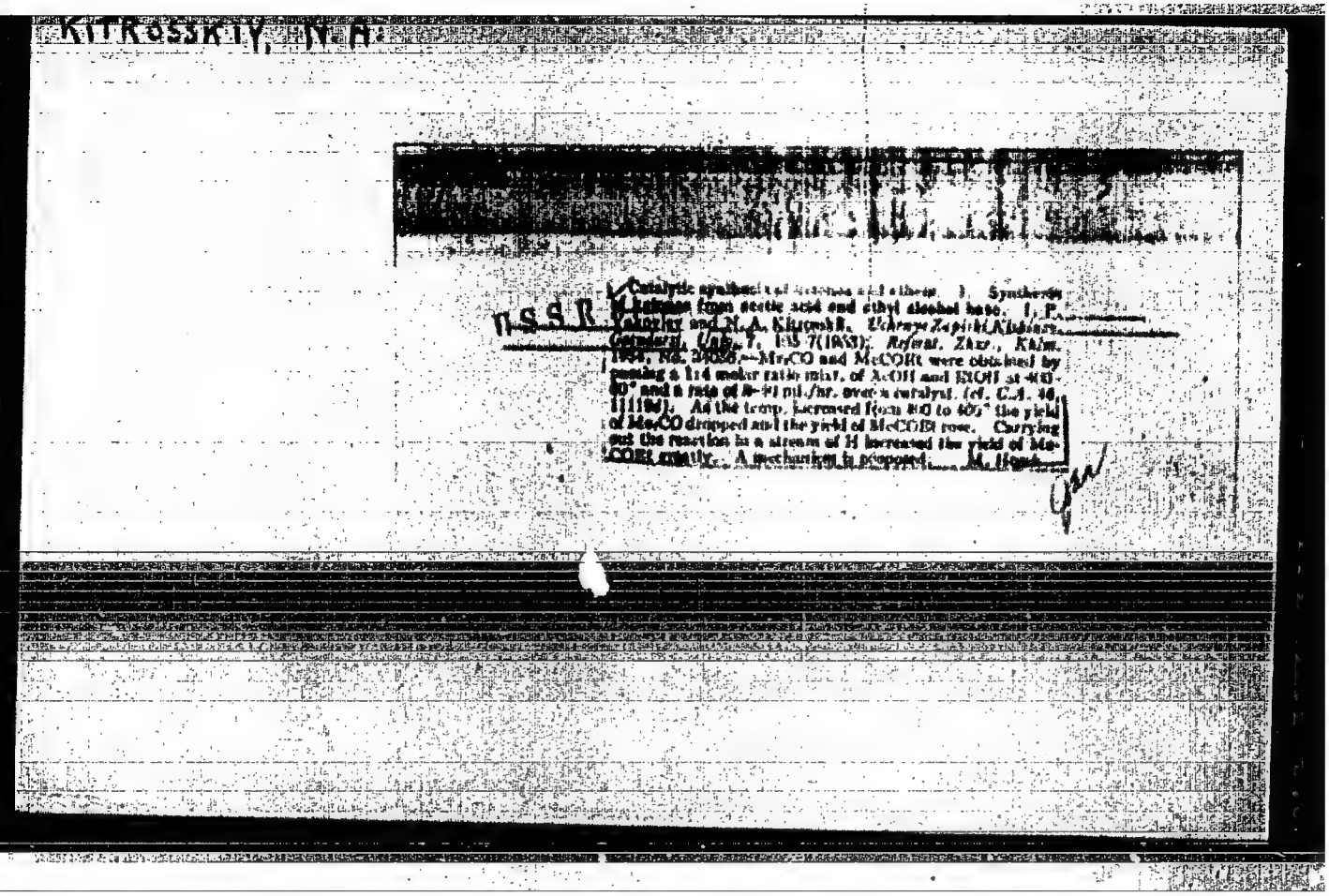
random function of time. The paper derives a formula for the calculation of a correlation index reflecting the optimality of the dynamic conditions under which the system operates. The author concludes that automatic optimization of a regulatory process using perturbations determined by the magnitude of deviation of a correlation index of performance optimality is characterized by high-speed operation and can be accomplished with comparative ease. Orig. art. has: 3 figures and 20 formulas.

ASSOCIATION: Institut energetiki i elektrotekhniki, Akademii Nauk Litovskoy SSR (Institute of Energetics and Electrical Engineering, Academy of Sciences of the Lithuanian SSR)

SUBMITTED: 10Nov63 ENCL: 00

SUB CODE: IE NO REF SOV: 006 OTHER: 000

Card 2/2


KITROSSKIY, N. A.

USSR

Catalytic synthesis [illegible] Synthesis of methanol from acetic acid and ethyl alcohol vapor. I. P. Kolotyrkin and N. A. Kitrosskii. *Ukrayns Zapiski Khimii, Gornyi, Ural.* 7, 135-7(1953); *Referat. Zhur., Khim.* 1954, No. 24026.—MeCO and MeCOEt were obtained by passing a 1:4 molar ratio mixt. of AcOH and EtOH at 400-60° and a rate of 8-91 ml./hr. over a catalyst. (cf. C.A. 46, 11119d). At the temp. increased from 400 to 450° the yield of MeCO dropped and the yield of MeCOEt rose. Carrying out the reaction in a stream of H increased the yield of MeCOEt greatly. A mechanism is proposed. M. Hoch

S/063/60/005/003/007/011/XX
A051/A029

AUTHORS: Kitrosskiy, N.A., Ismail'skiy, V.A.

TITLE: Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobensene

PERIODICAL: Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva im. D.I. Mendeleyeva, 1960, Vol. 5, No. 3, pp. 347-349

TEXT: It was stated (Ref. 1) that the long-wave maximum of molecular complexes of the /BK + AK/ type, where BK is the complex electronophilic chromophore (B is the electronophilic chromophore, e.g., NO_2, C - N^+) and AK is the complex electrono-donor chromophore (A is the electrono-donor chromophore, e.g., NMe_2, K is a conjugated system, e.g., a benzene nucleus), may lie quite close to the maximum of the corresponding compound with a conjugated structure of the cochromophore B-K-A(II), in which the systems BK and AK are superimposed (III). For $\lambda_{max.}$ it may even be shifted bathochromically.

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For example, for (I) λ_{max} 396 mμ in pyridine, and for (III)- 429 mμ in nitrobenzene. These conclusions were also confirmed on compounds of the heterocyclic series in Refs. 2-4. The authors of this work came to the conclusion that the stability of the complexes increases with an increase in the area of the conjugated π - electron system in the components. These conclusions were confirmed experimentally by measuring the spectra of solutions of α and β-naphthalamines (AK_1 and AK_2, respectively) with nitrobenzene (BK) (IV, VI) and comparing them to spectra of compounds with a conjugated structure of the B-K-A (V) and (VII) type, in which the systems BK and AK are superimposed (Table 1, Figs. 1 and 2). 1,2-dichloroethane was used as solvent, which was purified correspondingly. In the case of the molar ratio $1AK_1$: 10BK and $1AK_1$:50BK at c ~ 10^{-2} mole/l only a slight bathochromic shift of the curve was noted (2,3 Fig. 1, Table 1). At lgε = 2 λ the limits of absorption were: No 1 366 mμ, No. 2 372 mμ, No. 3 388 mμ.

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The shift of the absorption boundary clearly points to the noticeable formation of a complex under these conditions. In increasing the molar ratio to $1AK_1$: 150 BK (No. 4, Table 1, Fig. 1) the formation of the complex (IV) is observed in a new band ($\lambda_{max.}$ 415 mμ), lying in the same region as $\lambda_{max.}$ of the corresponding compound of the BKA(V) type, viz., 443 mμ (although shifted hypsochromically). With a further increase in the excess of the component BK(IAK_1 : ∞BK) for the solution No. 5 α-naphthalamine in nitrobenzene the intensity of the complex band increases up to ε = 1,620. However, $\lambda_{max.}$ (403 mμ) is shifted hypsochromically ($\Delta\lambda$ = -12) as compared to No. 4 (Fig. 1), which calls for an explanation. Similar phenomena were noted for solutions of β-naphthalamine (AK_2) with nitrobenzene (BK) (VI). For the solutions $1AK_2$: 10BK and $1AK_2$: 50BK a slight bathochromic shift was noted of the λ of the absorption boundary: No. 7 372 mμ, No. 8 388 mμ, No. 9 383 mμ (Nos. 8,9, Table 1, Fig. 2). However, at $1AK_2$: 150BK, $\lambda_{max.}$ = 414 mμ occurs, and for the solution No. 11 in $C_6H_5NO_2$ $\lambda_{max.}$ = 418 mμ,

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Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

which almost coincides with λ_{max} of the structure compound B-K-A (VII)- $\lambda_{max.}$ = 420 mμ. These examples confirmed the closeness of the energy values of excitation in exomolecular interaction of the systems AK + BK and in the exomolecular interaction of the same systems in the superimposed state in the conjugated system B-K-A. Comparison of the values of $\varepsilon_{max.}$ for solutions of α- and β-naphthalamines with nitrobenzene to solutions of aniline with nitrobenzene (Table 2) shows that the stability of the complexes increases in the order of $C_6H_5NH_2 < \beta\text{-}C_{10}H_7NH_2 < \alpha\text{-}C_{10}H_7NH_2$. This deduction is regarded as a confirmation of the hypotheses that complex-formation is the result of a laminated association of flat molecules aided by a partial electronic bond (exo-ρ-bond) acting perpendicularly to the plane of the molecules along the π-electron cloud axis ("complex mesomery", "complex conjugation") (Ref.2, 7) and that the ability of complex-formation increases with an increase of the area of the π-electronic systems in the components. There are 2 tables, 2 graphs, 7 references: 6 Soviet, 1 English.

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S/063/60/005/003/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

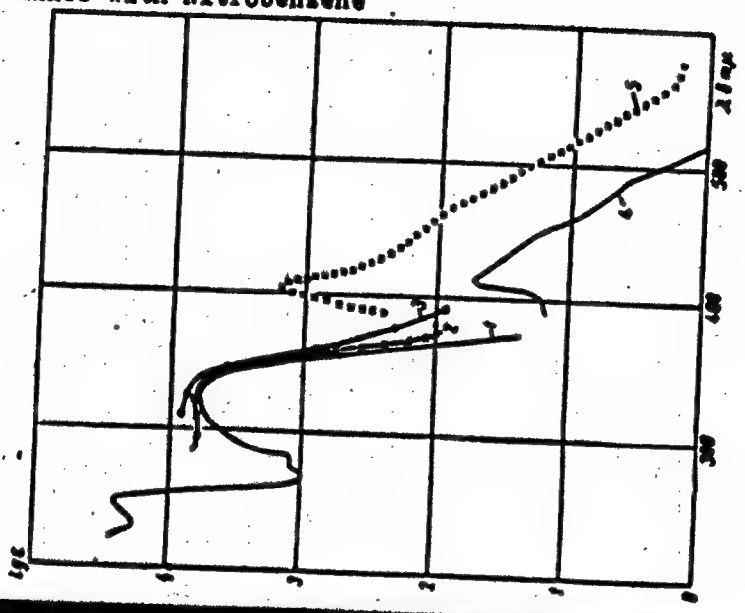
SUBMITTED: December 7, 1959

1

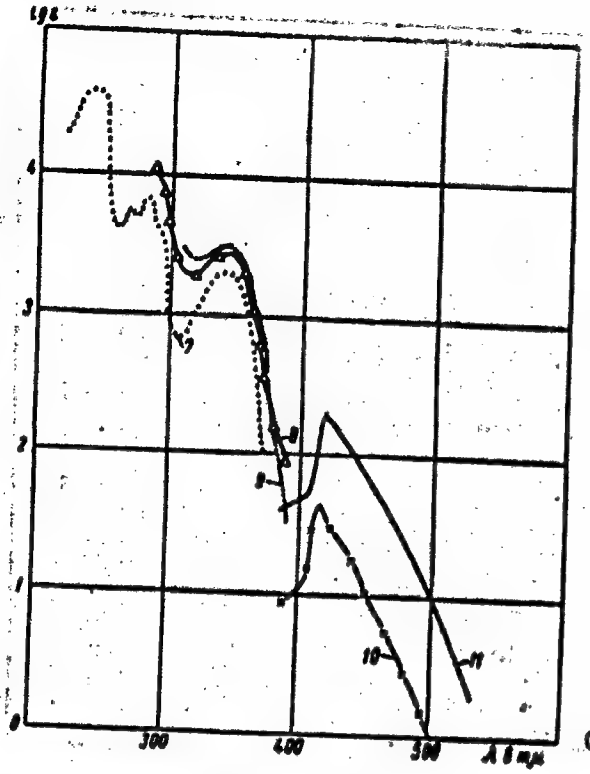
Card 5/11

S/063/60/005/003/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene



Card 6/11



3/063/60/005/003/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

Figure 2

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A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

№№ растворов ①	Строение и соотношение компонентов ②	Растворитель ③	$\lambda_{max.}$ ④	$\varepsilon_{max.}$ ⑤
1	AK_1(α-$NH_2C_{10}H_7$)	CH_2ClCH_2Cl	245	25600
			275	1230
			322	6040
2	$1AK_1$:10BK	"	320	6480
3	$1AK_1$:50BK	"	"	"
4	$1AK_1$:150BK	"	415	56
5	$1AK$: ∞ BK (IV)	$C_6H_5NO_2$	403	1620
6	$B-K_1-A$ (V)*	C_2H_5OH	443	15140
7	AK_2(β-$NH_2C_{10}H_7$)	CH_2ClCH_2Cl	240	37920
			272	3450
			282	6810
			345	2240
8	$1AK_2$:10BK	"	340	2930
9	$1AK_2$:50BK	"	340	3120
10	$1AK_2$:150BK	"	414	42
11	$1AK_2$: ∞ BK (VI)	$C_6H_5NO_2$	418	207
12	$B-K_2-A$ (VII)*	C_2H_5OH	420	5370

Table 1: Comparison of absorption spectra of components of the AK and BK types with spectra of molecular complexes of the [AK⌒BK] type and corresponding systems B − K − A ($C\text{-}10^{-2}$ mole/1). ① No. of solution; ② structure and ratio of components; ③ solvent; ④ $\lambda_{max.}$; ⑤ $\varepsilon_{max.}$.

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S/063/60/003/003/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

Table 2: Values of $\lambda_{max.}$ and $\varepsilon_{max.}$ for solutions of naphthalamines and aniline with nitrobenzene ($c = 10^{-2}$) mole/l)

Structure of the amine / Solutions	α-$C_{10}H_7NH_2$		β-$C_{10}H_7NH_2$		$C_6H_5NH_2$	
	$\lambda_{max.}$	$\varepsilon_{max.}$	$\lambda_{max.}$	$\varepsilon_{max.}$	$\lambda_{max.}$	$\varepsilon_{max.}$
1AK:150BK	415*	56	414*	42	430***	7
1AK: BK	403**	1620	418**	208	430**	54
B-K-A	(V)443	15140	(IV)420	5370	375***	15450

* in ДХЭ(DKhE); ** in $C_6H_5NO_2$; *** in ethanol.

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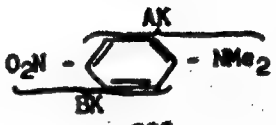
Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

Structural formula 1: $[O_2NC_6H_5 + Me_2NC_6H_5]$ (I)

(II)



(III)

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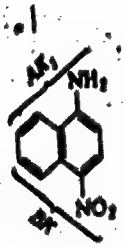
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

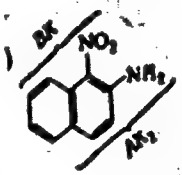
$[\alpha\text{-}NH_2C_{10}H_7 + C_6H_5NO_2]$ IV

Strucutural formula 2



V

$[\beta\text{-}NH_2C_{10}H_7 + C_6H_5NO_2]$ VI



VII

Card 11/11

KITROSSKIY, N.A.; IZMAIL'SKIY, V.A.

Intermolecular interactions and spectral color. Study of the absorption spectra of solutions of nitroarenes in dimethylaniline. Zhur. VKHO 5 no. 5:592-593 '60. (MIRA 13:12)

1. Moskovskiy gorodskoy pedagogicheskiy institut imeni V.P. Potemkina.
(Aromatic compounds--Spectra)

S/020/60/132/03/30/066
B011/B008

AUTHORS: Kitrosskiy, M. A., Ismail'skiy, V. A.

TITLE: Absorption Spectra of the Solutions of Dimethyl-amino-styryl Derivatives of Acridine in Nitrobenzene

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3, pp. 598-601

TEXT: The authors wanted to check the assumptions that the dimethyl-amino-styryl derivatives of the acridine and quinoline form colored complexes with nitro-benzene. For this purpose they studied the spectra of the molecular complexes which develop at the dissipation of the components AK_1-AK_5 (I-V). They are anhydro bases of the acridine derivatives (Table 1). Nitro-benzene (BK) was used in great excess as a solvent in order to shift the equilibrium $AK + BK \rightleftharpoons [AK \cdot BK]$ in the direction of the complex. The interaction of the above mentioned AK-compounds with $C_6H_5NO_2$ (BK) led in all cases to a bathochromic shift of the curve of the anhydro base. The authors explain this by the

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Absorption Spectra of the Solutions of Dimethyl-amino-styryl Derivatives of Acridine in Nitrobensene

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B011/B008

formation of a complex in the solution. They succeeded in making a determination which they consider to be very important: a new band appeared in the spectrum at the formation of the complex of $C_6H_5NO_2$ with 9-(p-dimethyl-amino-styryl)-acridine (AK_1, I) (2, Fig. 1) or with 9-(p-dimethyl-amino-styryl)-3,4-benzacridine (AK_4, IV) (11, Fig. 2). Its shape and the maximum range are surprisingly similar to the long-wave band and the λ_{max} of corresponding dyes (3, Fig. 1 and 12, Fig. 2). The latter dyes develop by addition of HCl and of RI to the anhydro base and from the corresponding complex of the mentioned AK with the acridine component BK (Refs. 2-4). It follows therefrom that $C_6H_5NO_2$ appears in the complex as a sort of aprotic acid. The authors see the more probable explanation of the mentioned similarity of the curves and the absorption ranges in the following: the transmission of the charge at the excitation by light does not occur between the components which form the complex (Ref. 7), but within one of the components, in this case the AK. It obtains a partial charge (δ^+) (Ref. 8) owing to a complex conjugation ("Complex-Mesomerism" Refs. 9,10). The systems AK_1 and AK_4 in the mentioned complexes thus play the role of the

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principal chromophoric component. It follows from Table 1 and Fig. 1 that by the formation of the benzene ring in the position 1,2 in the 9-(p-dimethyl-amino-styryl)-1,2-benzacridine (AK_2,II), the curve is displaced strongly hypsochromically, compared with (AK_1,I) at the anhydro base (4) as well as for the dye-salt (6) (N-ethyl perchlorate AK_2(II)). The authors see the main cause of this phenomenon in the deviation of the dimethyl-amino-styryl-chromophore-group and the shaded parts of the molecule (Fig. 3) from the coplanarity. These phenomena became particularly apparent on the spectrum of the solution ($AK_2 + C_6H_5NO_2$): the slight shift of the curve in the direction of the long waves and the characteristic bands in the 600-700 mμ range which existed in the case of 2 and 11, are missing in the visible part of the spectrum. There is only an unclear bend (5, Fig. 1). The authors discuss also analogous phenomena at A_3 and A_5. In conclusion, they state that the substitution of the acridine- or the quinoline-component by nitrobenzene gave a new proof for the fact that the occurrence of coloring is not connected with the alcoholysis of the onium component and with

Absorption Spectra of the Solutions of Dimethyl-amino-styryl Derivatives of Acridine in Nitrobenzene

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B011/B008

the formation of halochromic products with the AK-component. The authors mention A. I. Kipriyanov. There are 3 figures, 1 table, and 18 references, 14 of which are Soviet.

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V. P. Potemkina (Moscow Pedagogical Institute imeni V. P. Potemkin)

PRESENTED: January 21, 1960, by B. A. Kazanskiy, Academician

SUBMITTED: January 20, 1960

Card 4/4

KITROSSKIY, N.A.

LITROSSKIY, N.A.; IZMAIL'SKIY, V.A.

Exomolecular interactions and spectral color. Absorption spectra of molecular complexes of naphthylamines with nitrobenzene. Zhur. VKHO 5 no. 3:347-349 '60.
(MIRA 14:3)

1. Moskovskiy pedagogicheskiy institut im. V.P. Potemkina.
(Naphthylamine) (Benzene) (Complex compounds)

KITROSSKIY, N. A., Cand. Chem. Sci. (diss) "Spectra of Absorption of Molecular Complexes from Complex Chromophore Systems Containing Condensed Aromatic and Hetero-Cyclic Nuclei." Moscow, 1961, 15 pp (All-Union Scient. Res. Movie-Photographic Instit. "NIKFI") 150 copies (KL Supp 12-61, 256).

BRUSOVA, L.V.; GORKIN, V.Z.; ZHELYAZKOV, D.K.; KITROSSKIY, N.A.; LEONT'YEVA, G.A.; SEVERINA, I.S.

New spectrophotometric method for determining monoamine oxidase activity in liver homogenates. Vop. med. khim. 10 no.1:83-89 Ja-F '64. (MIRA 17:12)

1. Institute of Biological and Medical Chemistry, Academy of Medical Sciences of the U.S.S.R., Moscow.

GORKIN, V.Z.; KRIVCHF'KOVA, R.S.; Prinimali uchastiye: KITROSSKIY, N.A.; LEONT'YEVA, G.A.

Mechanism of inhibition of the blood amine oxidase (spermine oxidase) activity by isoniazid. Vop.med.khim. 10 no.2:149-154 Mr-Ap '64. (MIRA 18:1)

1. Laboratoriya biokhimii aminov i drugikh azotistykh osnovaniy Instituta biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.

GORKIN, V.Z.; KITROSSKIY, M.A.; KLYASHTORIN, L.B.; KOMISSAROVA, N.V.; LEONT'YEVA, G.A.; [illegible]CHKOV, V.A.

Substrate specificity of amino acid oxidase. Biokhimiia 29 no.1: 88-96 Ja-F '64. (MIRA 18:12)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR i Institut khimii prirodnykh soyedineniy AN SSSR, Moskva.
Submitted April 28, 1963.

ACCESSION NR: AP4041342 S/0115/64/000/005/0019/0021

AUTHOR: Bardila, P. I.; Kits, A. I.; Lakh, V. I.; Pinchevskiy, A. D.; Shparov, P. I.

TITLE: New platinum resistance thermometers

SOURCE: Izmeritel'naya tekhnika, no. 5, 1964, 19-21

TOPIC TAGS: thermometer, resistance thermometer, platinum resistance thermometer

ABSTRACT: Soviet-make resistance thermometers for a -200+500C range with platinum wire wound on a mica form have shown these shortcomings: (a) poor seal, (b) mechanical weakness, (c) unwieldy design, and (d) high thermal inertia. A new design, free from the above drawbacks, consists of four helices, made from 0.05-0.07-mm Pt wire, placed in channels in a ceramic cartridge; the channels are subsequently filled with alumina powder. Temperature measurements up to 700C are possible. These types are developed and offered for production.

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ACCESSION NR: AP4041342

Type:	Resistance at 0C, ohms	Sensitive elem. dia., mm	Length, mm	Channel dia., mm
Single	10	2.8	20	0.6
	46	4.8	25	1.3
	46	4.2	35	1.2
	100	4.8	50	1.3
Double	46	4.8	50	1.3

Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: TD, IE NO REF SOV: 004 OTHER: 000

Card 2/2

ACC NR: AP7002633 (A,N) SOURCE CODE: UR/0413/66/000/023/0182/0182

INVENTOR: Kits, A. I.; Kits, I. I.

ORG: none

TITLE: Method of determining high temperatures of gases. Class 42, No. 139107

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 182

TOPIC TAGS: ~~high temperature gas measurement~~, temperature measurement, ionization, gas ionization, GAS PROPERTY

ABSTRACT:
A method has been developed for determining high temperatures of gases from the degree of their ionization. To increase the accuracy of the measurements, a jet of the ionized gas is directed through a magnetic field, and the degree of its ionization is measured from the magnitude of the emf induced in the jet.

SUB CODE: 20, 21/ SUBM DATE: 17Sep60/ ATD PRESS: 5113

Card 1/1 UDC: none

LISOVSKIY, I.V.; KITS, E.M.

Device for the formation of air channels in hay bales. (MIRA 16:2)
Zhivotnovodstvo 23 no.5:52-54 My '61.

1. Leningradskiy sel'skokhozyaystvennyy institut.
(Hay—Harvesting)

ACC NR: AP7002633 (A,N) SOURCE CODE: UR/0413/66/000/023/0182/0182

INVENTOR: Kits, A. I.; Kits, I. I.

ORG: none

TITLE: Method of determining high temperatures of gases. Class 42, No. 139107

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 182

TOPIC TAGS: [redacted], temperature measurement, ionization, gas ionization, QNS PROPERTY

ABSTRACT:
A method has been developed for determining high temperatures of gases from the degree of their ionization. To increase the accuracy of the measurements, a jet of the ionized gas is directed through a magnetic field, and the degree of its ionization is measured from the magnitude of the emf induced in the jet.

SUB CODE: 20, 21/ SUBM DATE: 17Sep60/ ATD PRESS: 5113

Card 1/1 UDC: none

KITS, V., brigadir prokhodchikov

Willy-nilly tourists. Mast.ugl. 9 no.6:24 Je '60.
(MIRA 13:7)

1. Shakhta "Zimnika-3-4" tresta Prokop'yevskugol'.
(Kuznetsk Basin--Commuting)

KITSAK, N.A., inzhener; KHRENOV, K.K., redaktor; BARABASH, M., redaktor; LIBERMAN, T., tekhnicheskiy redaktor.

[Underwater metal cutting by welding and clearing of river beds] Rezka metallov pod vodoi i raschistka rusel. Pod red. K.K.Khrenova. Kiev, Gos. izd-vo tekhn. lit-ry Ukrainy, 1950. 50 p. (MLRA 8:2)

1. Deystvitel'nyy chlen AN USSR (for Khrenov).
(Underwater welding and cutting) (Diving, Submarine)

KITSAK, N.A., inzh.; ZABELLA, K.A., inzh.

Radial-guy bridge in Kiev. Transp. stroi. 14 no.3:14-16 Mr '64. (MIRA 17:6)

ERMAN, Nikolai ; KITSATOVA, Meta; SEPPING, H., red.

[Consumption in the period of transition to communism] Tarbimine kommuni mile ülemineku perioodil. Tallinn, Eesti Riiklik Kirjastus, 1963. 97 p. [In Estonian] (MIRA 17:6)

KITSAY, V.Ye., mayor meditsinskoy slushby

Peculiarities of the course of penetrating thoracic wounds complicated by formation of blood clots in the pleural cavity. Voen.-med.zhur. no.7:27-32 Jl '57. (MIRA 11:1)

(THORAX, wounds and inj.
causing blood clot form. in pleural cavity)
(HEMOTHORAX, etiol. and pathogen.
gunshot wds. causing blood clot form. in pleural cavity)

KITSE, E., kand. sel'khoz. nauk; PIHO, A., kand. sel'khoz. nauk; ROOMA, I.; TARANDI, K., dots., sel'khoz. nauk; REINTAM, L., kand. sel'khoz. nauk; ARAK, A., red.

[Soil science] Mullateadus. [By] E.Kitse ja teised. Tallinn, Eesti Riiklik Kirjastus, 1962. 406 p. [In Estonian]
(MIRA 17:10)

KITSE, E. YA.

KITSE, E. YA. — "Changes in the Agrochemical Indicators of the Podzol Soil during the Vegetation Period as Well as During the Drying and Preserving of Soil Samples." Estonian Agricultural Academy, Tartu. 1956. (Dissertation for the Degree of Candidate of Agricultural Sciences)

SO: Knizhnaya Letopis' No 44, October 1956

81672
S/056/60/038/06/08/012
B006/B056

24.2120
10.2000(A)

AUTHORS: Kitsenko, A. B., Stepanov, K. N.

TITLE: The Instability of a Plasma With Anisotropic Ion and Electron Velocity Distribution

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 6, pp. 1840 - 1846

TEXT: L. I. Rudakov and R. Z. Sagdeyev (Ref. 1) showed that pressure anisotropy in a rarefied plasma leads to instability; R. V. Polovin and N. L. Tsintsadze (Ref. 2) have generalized the results of these investigations for the case in which the Van Alfvèn velocity is of the order of the velocity of light. These authors operated with the quasi-hydrodynamic approximation which is applicable to such plasma motions in the case of which no pressure transfer takes place along the magnetic lines of force. In the present paper, the low-frequency oscillations of an unbounded plasma are investigated with an anisotropic velocity distribution of electrons and ions on the basis of the kinetic equation (1). Special cases of this group of problems have already been dealt

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The Instability of a Plasma With Anisotropic Ion and Electron Velocity Distribution

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with by A. A. Vedenov and R. Z. Sagdeyev. In the approximation $|\omega'| \ll \omega_{Hi}$, $\vec{k}^2 v_i^2 \ll \omega_{Hi}^2$, where $\vec{k}$ is the wave vector and $\omega_{H\alpha} = e_\alpha H_0 / m_\alpha c$, and when the Van Alfvèn velocity is low compared to c, the dispersion equations for the electro-magnetic waves in a plasma decompose in (4); $n^2 \cos^2\theta - \varepsilon_{11} = 0$, and (5); $n^2 - \varepsilon_{22} - \varepsilon_{23}^2/\varepsilon_{33} = 0$; ε_{ij} denotes the tensor of the dielectric constant, $n = kc/\omega'$, $\omega' = \omega - i\gamma$, θ - the angle between $\vec{k}$ and $\vec{H}_0$; the index α refers either to electrons (e) or ions (i). The values of ε_{ij} are defined by the equations (6), and the integrals occurring therein are also given. The frequency of the ordinary magneto-hydrodynamic wave, which is analogous to the Alfvèn wave in magneto-hydrodynamics, is described by equation (4). Herefrom it is possible to obtain an explicit expression for ω'^2, which is equal to that obtained in quasihydrodynamic approximation. (5) determines the frequency of the "extraordinary" magnetohydrodynamic wave and the "sound wave" (which are

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TITLE: Passage of a beam of charged particles through a magnetic plasma

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 3, 1961, 297-305

TEXT: If a beam of particles with isotropic distribution function passes through a magnetic plasma, "slow" electromagnetic waves may be excited by either Cherenkov or cyclotron excitation; both are related to the anomalous Doppler-effect. If the distribution function is anisotropic, new effects can arise; in particular, waves related to the normal Doppler effect can be excited as quoted by V.V. Zheleznyakov (Ref. 7: Izv. VUZ'ov MVO SSSR, Radiofizika, 3,57, 1960). With the anomalous Doppler-effect and thermal motion of the particles along the magnetic field, excitation as well as damping of waves is possible. Instability develops also if the beam is at rest, ($v_0 = 0$). In the present work, the effect of an anisotropic

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distribution function of particles on the excitation of electromagnetic waves in a plasma is considered. The distribution function is chosen in the form

$$f_{0\alpha}(v_\perp, v_\parallel) = \frac{n_0'}{(2\pi)^{3/2} v_{\perp\alpha} v_{T\alpha}} \delta(v_\perp - v_{\perp\alpha}) \exp\left\{-\frac{(v_\parallel - v_0)^2}{2v_{T\alpha}^2}\right\} \qquad (1.5)$$

where $v_T = \sqrt{\frac{T\alpha}{m\alpha}}$, $T\alpha$ - the "longitudinal" temperature of the beam, n_0' - the density of the beam. The velocity of the beam is non-relativistic. For the distribution (1.5), the increments are of the same order of magnitude for the first harmonics, since the length of the excited wave is of the same order as the Larmor radius of the particles. The dispersion equation for plane waves in the system plasma-beam has the form

$$An^4 + Bn^2 + C = 0 \qquad (2.1)$$

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$$A = \varepsilon_{33}\cos^2\theta + \varepsilon_{11}\sin^2\theta + 2\varepsilon_{13}\cos\theta\sin\theta,$$
$$B = 2(\varepsilon_{12}\varepsilon_{23} - \varepsilon_{22}\varepsilon_{13})\cos\theta\sin\theta + \varepsilon_{13}^2 - \varepsilon_{11}\varepsilon_{33} -$$
$$- (\varepsilon_{22}\varepsilon_{33} + \varepsilon_{23}^2)\cos^2\theta - (\varepsilon_{11}\varepsilon_{22} + \varepsilon_{12}^2)\sin^2\theta, \qquad (2.2)$$
$$C = \varepsilon_{22}(\varepsilon_{11}\varepsilon_{33} + \varepsilon_{13}^2) + \varepsilon_{11}\varepsilon_{23}^2 + 2\varepsilon_{12}\varepsilon_{23}\varepsilon_{13} - \varepsilon_{22}\varepsilon_{13}^2,$$

The permittivity-tensor of the plasma with beam has the form

$$\varepsilon_{ij} = \varepsilon_{ij}^{(0)} + \varepsilon'_{ij} \qquad (2.3)$$

$\varepsilon_{ij}^{(0)}$ being the permittivity-tensor of a cold plasma, and ε'_{ij} an additional term due to the beam.

$$\varepsilon_{11}^{(0)} = \varepsilon_{22}^{(0)} = 1 - \sum_s \frac{\Omega_s^2}{\omega^2 - \omega h_s}, \quad \varepsilon_{33}^{(0)} = 1 - \sum_s \frac{\Omega_s^2}{\omega^2}, \qquad (2.4)$$
$$\varepsilon_{12}^{(0)} = -i\sum_s \frac{\Omega_s^2 h_s}{\omega(\omega^2 - \omega h_s)}, \quad \varepsilon_{13}^{(0)} = \varepsilon_{23}^{(0)} = 0.$$

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The excitation of the following types of slow electromagnetic waves is examined: Longitudinal plasma oscillations in the magnetic field, quasi-longitudinal electromagnetic plasma-waves, and ion-cyclotron and magneto-hydrodynamic waves. The dispersion equation for longitudinal oscillations has the form

$$A = \varepsilon_{33}\cos^2\theta + \varepsilon_{11}\sin^2\theta + 2\varepsilon_{13}\cos\theta\sin\theta = 0. \qquad (3.1)$$

If the thermal motion of the electrons is neglected, the form

$$1 - \frac{\Omega^2\cos^2\theta}{\omega^2} - \frac{\Omega^2\sin^2\theta}{\omega^2-\omega_H^2} - \sum_s \left[\frac{\Omega'^2\cos^2\theta I_s^2}{(\omega - s\omega_H - k_\parallel v_0)^2} + \frac{2\Omega'^2\sin^2\theta s I_s I_s'}{s\omega_H(\omega - s\omega_H - k_\parallel v_0)}\right] = 0. \qquad (3.4)$$

is assumed; its solution is sought in the form

$$\omega = k_\parallel v_0 + s\omega_H + \xi,\ |\xi| \ll |k_\parallel v_0 + s\omega_H| \qquad (3.5)$$

If $\nu = k_\parallel v_0 + s\omega_H$ is not close to the eigenfrequency ω_+ or ω_-,

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then the increment is determined by

$$\varepsilon = \varepsilon_0 |I_s(a)|, \quad \varepsilon_0^2 = \frac{(\nu^2 - \omega_{//}^2)\nu^2\Omega'^2\cos^2\theta}{(\nu^2-\omega_+^2)(\nu^2-\omega_-^2)}. \tag{3.6}$$

if $\nu \approx \omega_\pm$, the increment is given by

$$\frac{\varepsilon}{\omega_\pm} = \frac{-1+i\sqrt{3}}{2^{4/3}}\left\{\frac{\Omega'^2\cos^2\theta I_s^2}{\omega_\pm^2 K_\pm}\right\}^{1/3}, \tag{3.7}$$

where

$$K_\pm = \frac{\Omega^2\cos^2\theta}{\omega_\pm^2} + \frac{\Omega^2\omega_\pm^2\sin^2\theta}{(\omega_\pm^2-\omega_{//}^2)^2}.$$

If the density of the beam is small, the increment is given by

$$\frac{\varepsilon}{\omega_\pm} = -\frac{i\sqrt{\pi}\Omega'^2}{2K_\pm k^2 v_T^2} e^{-z_s^2}\left(z_s I_s^2 + \frac{2s\sqrt{uv}\,\alpha''}{a} I_s I_s'\right) \tag{3.13}$$

From (3.13) it follows that cyclotron excitation as well as damping may arise for the anomalous as well as the normal Doppler-effect.

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In the case of quasi-longitudinal propagation, the electron cyclotron frequency and the frequency of the waves are considerably less than Langmuir's frequency. The eigenfrequency of the waves is then given by

$$\omega_0 = \frac{|\omega_H \cos\theta|}{1+r}, \quad r = \frac{\Omega^2}{k^2c^2} \qquad (4.2)$$

The increment is determined by

$$\frac{\varepsilon}{\omega_0} = \frac{-1+i\sqrt{3}}{2^{2/3}}\left(\frac{\Omega^2|\operatorname{ctg}\theta|}{2(1+r)}\right)^{2/3}|R|^{1/3}, \qquad (4.3)$$

where

$$R = I_s^2[(u-1)(\sin^2\theta + ru s^2) - r\sin^2\theta - r(1+r)\operatorname{tg}^2\theta(1-s\sqrt{u})^2 - r^2us^2] + 2ru(\sin^2\theta + r\sqrt{us})aI_sI_s' + r^2(1+r)ua^2I_s'^2.$$

The dispersion equation is given for waves with frequency $\omega \ll \omega_{Hi}$ (ω_{Hi} being the ion cyclotron frequency). In the case of resonance $\omega_{1,2} \approx k_\parallel v_0 + s\omega_{H\alpha}$, the increment is given by

$$\frac{Im\,\varepsilon}{\omega_j} = \frac{\sqrt{3}}{2^{2/3}}\left|\frac{\Omega_e^2\omega_{H_e}^2\operatorname{ctg}^2\theta P}{\omega_j Q}\right|^{1/3}, \qquad (5.3)$$

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$$P = (n^2 - \varepsilon_{11}^{(s)})\alpha^2 J_s^2 + (n^2\cos^2\theta - \varepsilon_{11}^{(s)})\alpha^2 J_s'^2 - 2i\varepsilon_{12}^{(s)}\alpha s J_s J_s',$$

$$Q = \varepsilon_{11}^{(s)}\left[(1+\cos^2\theta)\frac{k^2 V_A^2}{\omega^2} - 2 + \frac{\omega^2}{\omega_{H_i}^2}\right]. \qquad (5.3)$$

These equations apply to both ordinary and extraordinary waves. Excitation as well as damping of ion-cyclotron and magnetohydrodynamic waves may occur for all harmonics ($s = 0, \pm 1, \pm 2, ..$). There are 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: D. Bohm, E. Gross, Phys. Rev., 75, 1851, 1864, 1949.

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TITLE: The excitation of electromagnetic waves in a magnetically active plasma by means of a beam of charged particles

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 2, 1961, 167-175

TEXT: Electromagnetic waves in an infinite plasma with a beam of non-relativistic particles passing through the plasma parallel to the external magnetic field are dealt with. The growth increments γ of the waves were determined for the case in which the thermal motion of the plasma particles may be neglected ("cold plasma") and in which the density of a passing beam is smaller than that of the plasma. The plasma may be considered to be "cold", if 1) the phase velocity of the waves is much greater than the mean thermal velocity of the plasma particles, 2) the mean Larmor radius of the plasma particles is small compared to the wave length, and 3) the wave frequency is not near the gyrofrequency of the plasma particles. The beam can be considered to be "cold" only when the growth increment is considerably

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greater than $\vec{k}v_t$ ($\vec{k}$ is the wave vector, v_t is the mean thermal velocity of the beam particles). For beams with low density, the increment is low and therefore the thermal motion of the particles of the beam is essential also at low beam temperatures. Here, the temperature of the "cold plasma" may be higher than that of the "hot" beam. First, oscillation of the unbounded plasma, through which a beam of charged particles passes parallel to the external magnetic field ($\vec{H}_0$) is dealt with. It is assumed that the volume charge and the electric current of the beam are compensated. In this case a dispersion equation for electromagnetic waves in the plasma in the presence of a beam is obtained on the condition that all quantities $\exp[i(\vec{k}\vec{r}-\omega t)]$ are proportional, from the kinetic equations of the plasma particles and the beam and from the Maxwell equations (see also e.g. Ref. 10):

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$$An^4 + Bn^2 + C = 0, \quad (2,1)$$

$$\left.\begin{aligned} A &= \varepsilon_{11}\sin^2\theta + \varepsilon_{33}\cos^2\theta + 2\varepsilon_{13}\cos\theta\sin\theta, \\ B &= 2(\varepsilon_{11}\varepsilon_{33} - \varepsilon_{13}^2 - \varepsilon_{12}^2)\cos\theta\sin\theta + \varepsilon_{12}^2 - \varepsilon_{11}\varepsilon_{22} - \\ &\quad - (\varepsilon_{22}\varepsilon_{33} + \varepsilon_{23}^2)\cos^2\theta - (\varepsilon_{11}\varepsilon_{22} + \varepsilon_{12}^2)\sin^2\theta, \\ C &= \varepsilon_{22}(\varepsilon_{11}\varepsilon_{33} + \varepsilon_{13}^2) + \varepsilon_{11}\varepsilon_{23}^2 + 2\varepsilon_{12}\varepsilon_{23}\varepsilon_{13} - \varepsilon_{22}\varepsilon_{12}^2. \end{aligned}\right\} \quad (2,2)$$

where ε_{ij} is the tensor of the dielectric constant, $n = kc/\omega$ and θ the angle between $\vec{k}$ and $\vec{H}_0$. The z axis is parallel to $\vec{H}_0$, the x axis lies in the plain of $\vec{k}$ and $\vec{H}_0$, $k_1 = k_\perp = \sin\theta k$, $k_2 = 0$, $k_3 = k_\parallel = \cos\theta k$. The tensor of the dielectric constant has the shape

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a)

$$\varepsilon_{11} = 1 - \sum_a \frac{2\pi\Omega_a^2}{\omega\omega_{Ba}} \sum_{-\infty}^{\infty} \int v_\perp^2 dv_\perp dv_\parallel \frac{R_{-1}^2 J_1^2}{\omega(\omega+kv_\parallel)},$$

$$\varepsilon_{22} = 1 - \sum_a \frac{2\pi\Omega_a^2}{\omega\omega_{Ba}} \sum_{-\infty}^{\infty} \int v_\perp^2 dv_\perp dv_\parallel \frac{R_{-1} J_1'^2}{\omega+kv_\parallel},$$

$$\varepsilon_{33} = 1 - \sum_a \frac{\Omega_a^2}{\omega^2} \left(1 + 2\pi \int dv_\perp v_\parallel^2 dv_\parallel \frac{\partial f_{0a}}{\partial v_\perp} + \sum_{-\infty}^{\infty} \frac{2\pi\omega}{\omega_{Ba}} \int dv_\perp v_\parallel^2 dv_\parallel \frac{R_{-1} J_1'^2}{\omega+kv_\parallel} \right),$$

$$\varepsilon_{12} = -i \sum_a \frac{2\pi\Omega_a^2}{\omega\omega_{Ba}} \sum_{-\infty}^{\infty} \int v_\perp^2 dv_\perp dv_\parallel \frac{R_{-1} J_1 J_1'}{\omega(\omega+kv_\parallel)},$$

(2.9)

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